

CLAIMS:

1. A pesticidal composition, comprising:
a first component selected from the group consisting of a chelating agent, a metal complex of a chelating agent, and mixtures thereof; and
a carrier material edible to insect pests;
wherein the pesticidal composition is effective to kill insect pests upon ingestion.
2. The composition of claim 1, wherein the chelating agent is selected from the group consisting of an aminopolycarboxylic acid, an amine, an amide, a carboxylic acid, a phosphonic acid, and combinations thereof.
3. The composition of claim 1, wherein the chelating agent is selected from the group consisting of ethylenediaminetetraacetic acid (EDTA), hydroxyethylenediaminetriacetic acid (HEDTA), ethylenediaminedisuccinate (EDDS), hydroxyethyldiphosphonic acid (HEDP), diethylenetriaminepentaacetic acid (DTPA), and combinations thereof.
4. The composition of claim 1, wherein the metal used in the metal chelate is selected from Group I elements, Group II elements, and transition metals.
5. The composition of claim 1, wherein metal complex of a chelating agent comprises a chelating agent combined with metal ions in the form of a metal salt.
6. The composition of claim 4, wherein the salt of the metal salt is selected from the group consisting of a sodium salt, a potassium salt, a calcium salt, a zinc salt, an ammonium salt, an amine salt, an amide salt, and combinations thereof.
7. The composition of claim 1, wherein the carrier material is selected from the group consisting of wheat flour, wheat cereal, bran, molasses, vinegar, agar, gelatin, pet food, wheat, soy products, oats, corn, corn cob, vegetable oils, citrus mash, rice, fruits, fish by-products, sugars, coated vegetable seeds, coated cereal seeds, dairy products, whey powder, casein, albumen, blood meal, bone meal, yeast, fats, beer products, and combinations thereof.

8. The composition of claim 1, wherein the carrier material comprises water, alcohols, vinegar, plant-derived oils, mineral oils, glycerol, glycols, and combinations thereof.
9. The composition of claim 1, wherein the first component is present in the composition at a concentration in the range of about 0.25% to about 40%.
10. The composition of claim 1, wherein the first component is present in the composition at a concentration in the range of about 0.5% to 30%.
11. The composition of claim 1, further comprising a pH-adjusting additive.
12. The composition of claim 11, wherein the pH-adjusting additive is selected from the group consisting of calcium carbonate, potassium carbonate, hydrochloric acid, potassium hydroxide, ascorbic acid, tartaric acid, citric acid, and combinations thereof.
13. The composition of claim 11, wherein the pH-adjusting additive is present in the composition at a concentration in the range of about 0.05 to 5.0% by weight.
14. The composition of claim 1, wherein the composition is effective to kill insect pests selected from the group consisting of aphids, leafhoppers, whitefly, sawfly larvae, caterpillars, beetles, cockroaches, earwigs, ants, flies, mosquitoes, wasps, and silverfish.
15. The composition of claim 1, further comprising at least one additive selected from the group consisting of attractants, phagostimulants, cellulose complexes, sand, clay, silica, polyacrylic acid polymers, polyacrylimide acid polymers, diatomaceous earth, alginate, and wax.
16. A method for killing insect pests, comprising:
providing a pesticidal composition having
a first component selected from the group consisting of a chelating agent, a metal complex of a chelating agent, and mixtures thereof, and

a carrier material; and

applying the pesticidal composition to an area infested with insect pests, such that the insect pests can ingest the pesticidal composition.

17. The method of claim 16, wherein the first component is present at an amount that is effective to kill the insect pests upon ingestion.

18. The method of claim 16, wherein the first component is present in the composition at a concentration in the range of about 0.25% to about 40%.

19. The composition of claim 16, wherein the first component is present in the composition at a concentration in the range of about 0.5% to 30%.

20. The method of claim 16, wherein the chelating agent is selected from the group consisting of an aminopolycarboxylic acid, an amine, an amide, a carboxylic acid, a phosphonic acid, and combinations thereof.

21. The method of claim 16, wherein the chelating agent is selected from the group consisting of ethylenediaminetetraacetic acid (EDTA), hydroxyethylenediaminetriacetic acid (HEDTA), ethylenediaminedisuccinate (EDDS), hydroxyethyldiphosphonic acid (HEDP), diethylenetriaminepentaacetic acid (DTPA), and combinations thereof.

22. The method of claim 16, wherein the metal used in the metal chelate is selected from Group I elements, Group II elements, and transition metals.

23. The method of claim 16, wherein metal complex of a chelating agent comprises a chelating agent combined with metal ions in the form of a metal salt.

24. The method of claim 23, wherein the salt of the metal salt is selected from the group consisting of a sodium salt, a potassium salt, a calcium salt, a zinc salt, an ammonium salt, an amine salt, an amide salt, and combinations thereof.

25. The method of claim 16, wherein the carrier material is selected from the group consisting of wheat flour, wheat cereal, bran, molasses, vinegar, agar, gelatin, pet food, wheat, soy products, oats, corn, corn cob, vegetable oils, citrus mash, rice, fruits, fish by-products, sugars, coated vegetable seeds, coated cereal seeds, dairy products, whey powder, casein, albumen, blood meal, bone meal, yeast, fats, beer products, and combinations thereof.

26. The method of claim 16, wherein the carrier material comprises water, alcohols, vinegar, plant-derived oils, mineral oils, glycerol, glycols, and combinations thereof.

27. The method of claim 16, wherein the carrier material further comprises at least one additive selected from the group consisting of attractants, phagostimulants, cellulose complexes, sand, clay, silica, polyacrylic acid polymers, polyacrylimide acid polymers, diatomaceous earth, alginate, and wax.